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ABSTRACT

This paper discusses the validity of licensure examination results as an indicator of the performance of higher educational institutions. Licensure examination scores are available to departments for a variety of disciplines and analysis is best performed within the departments. The quality of feedback may dictate the usefulness of results. Using annual feedback to develop institutional and national trends over time allows an institution to monitor the level of change in exam scores and trends can help with curriculum design and reform. When individual student scores are available, results can be used as one component of a multiple-component measure to assess student learning. The licensure examination score can be coupled with results of employer surveys, job placement information, and other measurements to provide a broad view of outcomes. There can be several kinds of limitations to using licensure examination scores depending on the nature of the data available from the licensure board. However, when a good understanding of the scope, content, and limitations of a given examination exists, and the examination mirrors the curriculum, the results can serve as an important part of a comprehensive assessment process. Appendices include information on sources of examination results in selected disciplines and information on the current status of state legislative reporting requirements. (Contains 18 references.) (JB)

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The Use of Occupational Licensure Examination Results in Outcomes Assessment

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Jean Endo
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The Use of Occupational Licensure Examination Results in Outcomes Assessment

Abstract

The movement toward greater accountability in higher education has made it necessary for institutions to develop extensive assessment plans to measure student outcomes. A performance indicator available to institutions are occupational licensure examination results of their graduates. These results used in conjunction with other student outcomes data can be a very useful tool in an institution's assessment effort. Discussion will include acquiring examination feedback, using the data, and the limitations of this outcomes measurement. Persons interested in student and program assessment are the intended audience for this presentation.

The purpose of this study is threefold. The validity of licensure examination results as a performance indicator will first be examined. Second, the compiled information regarding sources for acquiring examination feedback will be analyzed. Third, the uses and limitations of the feedback will then be discussed. Persons interested in assessment may find this information useful for understanding what data are available to departments and how scores can best be used in student and program assessment.

When the ultimate objective in a degree field is preparation for entry into the job market, it is important that the outcomes instrument measures occupational readiness (Nichols, 1991). According to the literature, licensure examination results are recognized as a potentially valid tool in major area student outcomes assessment. For example, James O. Nichols in *A Practitioner's Handbook for Instructional Effectiveness and Student Outcomes Assessment Implementation* (1991) stated that licensure examinations are "among the best end-of-program assessment procedures" (p.36). In addition, Sarah M. Dinham, in her study of assessment, accreditation and licensure (1989) concluded that "professional certification/licensure presents

attractive possibilities for broadening the assessment data base" (p.4).

Licensure examinations are widely used for protecting the health and welfare of the general public. "A license confers on its holder the right to use a title and to provide certain services that the law makes illegal for non-licensed persons to provide" (Kane, 1986, p.146). Colleges and universities were affected when the Manpower Acts required that licensure in certain professional occupations be coupled with graduation from an accredited university program (Lenn, 1987). The exams serve as a uniform measurement device that attempts to maintain curriculum consistency among academic programs between institutions, and consequently licensing boards have a high degree of control over program length and curriculum content (Kane, 1986).

Licensure is a governmental function, where certification is a function of professional organizations. Some medical fields licensure is not required, therefore certification is used as a means of recognizing persons who have obtained a predetermined level of competence in the given field (Lenn, 1987). These certification exams have been found to be widely used as assessment tools in place of a licensure exam. Therefore, a sample of these fields are included on the attached summary sheet (appendix 1). However, in some fields, for example nursing, certification examinations are used to recognize training beyond that of entry-level. After a graduate has passed the initial licensure exam, they may choose to specialize in a certain area within the field. The latter type of certification examinations are not included in this study.

According to Bogue and Saunders (1992), professional degree programs should remain closely attuned to skills necessary for entry into the profession. "To do otherwise would be institutional suicide, for no institution can long survive without a reasonably high proportion of

its graduates meeting professional licensure requirements and, thus becoming licensed to practice" (p.122). It was warned by the State Higher Education Executive Officers (1987) in their policy statement on program and institutional assessment, that "if an institution offers academic programs designed to lead to licensure or certification, and graduating students then have difficulty entering the profession, these programs need careful attention" (p.3). In addition, bodies such as licensing boards, state legislators and senior administrative officers often base the quality of both graduate and undergraduate professional programs on licensure examination pass rates of its students (Applebaum, 1988).

Using Licensure Examination Scores

Licensure examination scores are available to departments for a variety of disciplines including accounting, architecture, engineering, nursing, law and numerous medical professions. Most academic departments automatically receive feedback regarding their graduate's performance from their respective licensure board. Analysis of this feedback is performed best within the department because knowledge of curriculum, trends, and the profession is strongest on that level. In addition, using examination results in major area assessment ". . . will have obvious leverage on the department's faculty. . . 'batting averages' are often developed from such results" (Harris, 1985 p.20).

Even though departments wish to compare its student's performance with those of selected peer institutions, information gathered from the literature and licensure boards shows that examination feedback rarely includes comparative data other than national norms and averages. However, the nursing and pharmacy boards include state-wide averages in the feedback to institutions. The state bar associations release only institutional scores to the law

school deans, however the *BAR/BRI* digest publishes both the state-wide and nation-wide averages. The most detailed report on licensure exam results is published by the National Association of State Boards of Accountancy. A publication is released annually with data for each institution whose graduates completed the examination. The data are broken down by first-time and repeat-takers, and by level of college degree. This publication makes it easy for an institution to compare its graduate's performance with those from other institutions. The attached documentation (appendix 1) outlines the name and level of the exam, whether it leads to licensure or certification, the amount of feedback that can be obtained from the licensure boards, and what steps are needed (if any) to acquire data. Most boards automatically send test results to the institution in which an examinee graduated. The architecture, landscape architecture, and psychology boards, however, require a data request from the dean or director of the department.

There are two main functions of licensure examination results in assessment: student outcomes assessment and program assessment. The quality of feedback from licensure boards may dictate which function the results will best serve. If the results are reported without student identifiers, departments may be limited to using the results strictly for program assessment. Whereas if the feedback includes individual scores with identifiers, the scores can then be coupled with other measures for student outcomes assessment.

Program Assessment

Using annual feedback to develop institutional and national trends over time allows an institution to monitor the level of change in exam scores. These trends can then serve as a mechanism for curriculum design and reform (Gilley & Galbraith, 1986) and for evaluating

program effectiveness (Clagett, 1989).

Not every licensure examination is a good instrument to measure program effectiveness. When there is a high degree of overlap between the content of the curriculum and the examination, overall and sub-topic scores can be used to identify program strengths and weaknesses (Kane, 1986). Sample copies of the examination should be reviewed by the department to determine to what extent the discipline's curriculum is being measured. Licensure examinations are usually weighted toward testing only those skills pertaining to public safety and may sometimes exclude other skills. When the exam is only pertinent to a small part of a curriculum, additional measures are necessary for an overall assessment effort (Dinham, 1989). For example, some teachers' examinations cover a broad knowledge base including more knowledge gained from other disciplines than from the education curriculum itself. Therefore, this type of exam would not be a valid instrument to determine program effectiveness. Other exams such as engineering and architecture tend to measure very specific technical abilities as opposed to general knowledge. However, caution should be taken to ensure that results from specialized examinations, such as civil engineering are compared with the only the respective program as opposed to the entire engineering program.

When institutions receive licensure exam feedback, designation is usually made between the first-attempt pass rate and the subsequent-attempt pass rate. Examination feedback will usually be formatted with scores of first-time takers separated from those of repeat takers. The average number of attempts can to be monitored to track the success of repeat-takers, especially in disciplines where multiple attempts are common (Clagett, 1988). For example, the architectural registration examinees average three or more attempts to pass all nine sections

(Oklahoma State Board of Governors, 1993), where many other examinations may average one to two attempts. National average scores and average number of attempts required to pass an exam are available from examination feedback or from the governing boards administering the examination.

Student Outcomes Assessment

When individual student scores are available with identifiers, licensure examination results can be used as a component of multiple measures to assess student learning. The scores, coupled with employer surveys, job placement information and other end-of-program measurements provide a broad view of the major area student outcomes (Dinham, 1989).

Many institutions use their pass rates in conjunction with other measures of student outcomes such as: clinical or practicum experiences, pre-graduation exam results, capstone courses, final grade-point average, fieldwork and job placement. For example, a nursing program reported that scores from the nursing licensure examination are correlated with the individual student's performance on the National League of Nursing (NLN) exams taken during the junior and senior years, final grade-point-average, clinical performance, and gender. These results are then compiled for use in program assessment and student success prediction.

Limitations

Some precautions should be taken when using the scores for assessment purposes. First, as discussed earlier, an examination may not be an effective outcomes instrument if it does not resemble the curriculum of the discipline being assessed. Second, the variation of feedback from

respective licensure boards in regards to the use of student identifiers is a obstacle for student outcomes assessment. If individual scores do not have identifiers, they can not be paired with other measures of student outcomes for a comprehensive assessment plan. Third, reliance on self-reported scores when feedback is not available through licensure boards, introduces additional problems. Fourth, required internships in some disciplines, that occur between the completion of a degree and the examination prevents a direct linkage between curriculum quality and a test score (Nichols, 1991; Dinham, 1989). Finally, not all graduates of professional disciplines choose to take licensure examinations and instead decide to work in related fields or specialize in a non-licensed area (Dinham, 1989).

Some disciplines have the advantage of receiving individual student scores with identifiers whereas other disciplines have to be satisfied with receiving only aggregated institutional data. Many states have privacy laws which prohibit licensure boards from sending scores with identifiable variables such as name, gender, ethnic background, and year of graduation. Most licensure boards will report institutional results in aggregated form to remain within the limits of these laws. However, boards are permitted to have the examinees sign releases to allow the release of their scores to their graduating institution (Korb, 1992). When a researcher is limited to using aggregated institutional data without knowing the population, they are limited to using trend analysis for program assessment.

When feedback is not available through licensure boards, and an institution is limited to using self-reported scores, the results may not be representative of the group. If the data is being gathered through a survey instrument, results may be biased and unreliable because of low response rates. Those who returned the surveys are more likely to be the ones who have found

jobs or have passed the examinations (Korb, 1992).

A direct linkage between curriculum and program quality and a test score may not exist when the licensure examination is taken after a lengthy internship. Experiences during the internship often build upon the student's existing knowledge base that was formed during the completion of the degree program. Therefore, examinations taken during the final year of college or immediately following graduation are more accurate measure of program quality than those taken after an internship (Clagett, 1989).

Many graduates upon completion of a program may choose to work in a related field or continue on to graduate work, therefore scores will not be available for all graduates. In addition, in some fields it is optional to become licensed and some choose not to take the exam.

Discussion

Examination results may also be used in institutional assessment. The State Higher Education Executive Officers (1987) stated in their policy statement on program and institutional assessment that "the performance of students on licensure and certification examinations should be used as an appropriate measure for judging program and institutional quality" (p.3.). As a measure of institutional quality, The Student-Right-to-Know and Campus Security Act of 1990 (SRK) called for a feasibility study regarding the release of additional measures of student outcomes including institutional licensure exam success rates (Legislative History, P.L. 101-542). The proposed addition to the act called for the reporting of a single institutional pass-rate on licensure examinations.

The SRK feasibility study completed a comprehensive look at licensure examinations and found that a single institutional pass rate would be impossible. Problems occur when one attempts to combine pass rates of licensure examinations for all disciplines in one single institutional pass rate. Because of the number of examinations, the variability of the feedback from licensure boards, fluctuating minimum pass scores and differences in state examinations, a single pass rate would not be a meaningful or useful assessment measure. The study found, however, that feedback from individual licensure examination boards a good measure of student achievement in specific disciplines and single program institutions (Korb, 1992). The Track Record Disclosure Law also called for reporting of licensure examination pass rates. This law which parallels the SRK Act, requires institutions who offer nonbaccalaureate vocational or technical programs to provide entering students with information pertaining to graduation, job placement and pass rates for licensure and certification exams (Fox, 1991).

Legislative reporting requirements in many states now mandate that licensure examination pass rates be included as a component of their assessment report (see appendix 2). In contrast to the feasibility study by the SRK Act, these pass rates are by exam and not an single overall institutional pass rate. South Carolina and Tennessee requires not only the pass rate but the scores as well.

Conclusion

When the objective of a degree programs is preparation for a specific occupation, the outcomes measurement needs to measure occupational readiness. In addition, if the degree program encompasses a professional field, passing a licensure examination may be a prerequisite

for graduates before entering the occupation. Feedback from a many licensure examinations is available to higher education institutions for the purposes of program improvement. When an good understanding of the scope, content, and limitations of a given examination exists, and it has been determined that the instrument mirrors the curriculum, the given licensure examination is a good outcomes measurement for that program. Even though no single measure can determine institutional or departmental quality, licensure exam results are a useful component of a comprehensive assessment process.

Appendix 1

Sources for Licensure/Certification Examination Results In Selected Disciplines

Discipline	*License or Certification*	*Exam*	*National or State Exam*	*Source*	*Format of Results*	*Level of Availability*
Accounting	L	Certified Public Accountant Exam	N	CPA Candidate Performance on the Uniform CPA Exam by the National Association of State Boards of Accountancy, annual publication	Number of candidates, pass percentage for each section and overall; reported by first-time and repeat takers and by degree;	Source includes results for all institutions
Architecture	L	Architectural Registration Exam	N	National Council of Architectural Registration Boards 1735 New York Avenue, Suite 700 Washington, D.C. 20006	Block data by institution and national averages;	Data must be requested in writing from the dean or director of architecture
Audiology	L	National Teachers Exam in Audiology	N	Council of Professional Standards in Speech-Language Pathology and Audiology 10801 Rockville Pike Rockville, MD 20852	Individual scores; scores will have indentifiers if the examinee has requested that scores be sent to an institution, otherwise identifiers are not included on individual scores	Data are automatically sent to department head
Speech Pathology	L	National Teachers Exam in Audiology	N			
Counseling	L	National Board for Certified Counselors Exam	N	National Board for Certified Counselors 3-D Terrace Way Greensboro, NC 27403	-not released to institutions-	Departments are limited to using self-reported examination scores
Dental Hygiene	L	National Board Examination	N	National Board of Examiners 211 E Chicago Ave., Suite 1846 Chicago, IL 60611	Individual scores, overall institution rates and national averages;	Automatically sent to department
Dentistry	L	National Dental Board Examination	N	National Board of Examiners 211 E Chicago Ave., Suite 1846 Chicago, IL 60611	Individual scores, overall institution rates and national averages;	Automatically sent to department

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Appendix 1

Sources for Licensure/Certification Examination Results In Selected Disciplines

Discipline	*License or Certification*	*Exam*	*National or State Exam*	*Source*	*Format of Results*	*Level of Availability*
Emergency Medical Technology	L	National EMT Exam Part 1 – Practical Part 2 – Written	N	National Registry of EMTs PO Box 29233 Columbus, Ohio 43229	Institutional pass/fail scores overall and subtopic scores	National Board sends State Boards results who distributes to examinees and departments
Engineering		Fundamentals of Engineering Exam (EIT)	N	National Council of Engineering Examiners annually send institution's data to individual state governing boards;	Number of candidates percentage pass/fail on each exam and sub–test (same procedure for EIT and PPE)	Departments are sent data for their institutiononly from the state governing board
	L	Principles/Practice Exam (PPE)	N			
Lab Technology		Medical Laboratory Technician Exam	N	"Program Performance Summary" provided to examinees institution	Individual student scaled scores and score distributions	Report sent automatically to departments
Landscape Architecture	L	Uniform National Examination	N	Council of Landscape Architectural Registration Boards 12700 Fair Lakes Circle, Ste. 110 Fairfax, VA 22033	Block data by institution overall exam and sub–test	Data must be requested in writing from the dean or director of architecture
Law	L	Multistate Bar Exam Multistate Professional Responsibility Exam State Essay Exam	N N S	Institution notified by State Bar Association State and National pass rates in BAR/BRI Digest	Overall institution pass rates on the Multistate Bar exam and state essay exam sent to college dean	Institution scores only National and state pass rates available in the BAR/BRI Digest
Medical Records	C	Accredited Record Technician Exam (ART)	N	American Medical Records Assoc. 919 N. Michigan Ave, Ste 1400 Chicago, IL 6^690	Student identifiers are included on individual scores for students who have requested that data be sent to institution; other individual scores do not have identifiers; institutional means std deviations, national norms are included	Data automatically sent to institution

Appendix 1

Sources for Licensure/Certification Examination Results In Selected Disciplines

Discipline	*License or Certification*	*Exam*	*National or State Exam*	*Source*	*Format of Results*	*Level of Availability*
Nursing	L	NCLEX–RN	N	Data sent to institution Other data included in: NCLEX Summary Profiles (CTB/McGraw Hill, 2500 Garden Rd Monterey, California 93940)	Number of candidates, first–time and repeat takers, pass percentage	Departments are automatically sent institution and state–wide averages
Occupational Therapy	C	National OT Registration Exam	N	American Occupational Therapist Certification Board 4 Research Place, Ste 160 Rockville, MD 20850–3226	Aggregated institutional pass–fail rates national averages; institutional pass–fail rates on sub–tests, standard deviations, and scores divided by first–time and repeat takers.	Institutional and national scores are automatically sent to departments
Occupational Therapy Asst.	C	National OTC Certification Exam	N			
Optometry	L	National Board of Optometry Exam	N	National Board of Examiners in Optometry 5530 Wisconsin Ave., Suite 805 Chevy Chase, MD 20815	Reports means, ranges, z–scores, standard deviations, pass–fail rates, first–time/repeat–takers, for institut–ional data; individual scores of students who specify to have scores sent to instiiution; corresponding national aggregated data;	Institutional,student and national scores automatically sent to departments
Pharmacy	L	National Board of Pharmacy Licensing Examination	N	National Assoc of Boards of Pharmacy 700 Busse Highway Park Ridge, IL 60608	Individual scores are included but do not include identifiers; Averages for institution, state and national levels are also included;	Results are automatically sent to Schools of Pharmacy;

Appendix 1

Sources for Licensure/Certification Examination Results In Selected Disciplines

Discipline	*License or Certification*	*Exam*	*National or State Exam*	*Source*	*Format of Results*	*Level of Availability*
Physical Therapy	L	NPTE – National Physical Therapy Examinations	N	American Physical Therapist Assoc 1111 N Fairfax Alexandria, VA 22314	Individual scores without identifiers in frequency distribution; aggregated institutional pass/fail data; sub–section averages; divided by first–time/repeat takers; national averages for accredited and non–accredited programs;	Results are automatically sent to department
Physical Therapy Assistant	L	National Physical Therapy Assistant Examination	N			
Physicians Assistant	C	Physician Assistant National Certification Examination	N	National Commission on Certification of Physicians Assts. 2845 Henderson Mill Rd. NE Atlanta, Georgia 30341	Aggregated institutional scores and national norms	Results are automatically sent to department
Psychology	L	National Objective Exam Oral Examinations	N	American Board of Examiners in Professional Psychology 2100 E Broadway, Ste 313 Columbia, MO 65201	institutional pass–fail rates and national norms;	Contact state board for feedback
Radiology	C	Certification Exam in Radiologic Technology	N	Summary Report to Education Programs American Registry of Radiologic Technologists 1255 Northland Drive Mendota Heights, Minnesota 55120	Institutional and national scores for total test and individual sections	Institution and national scores are automatically sent to departments
Respiratory Therapy	C	CRRT	N	National Board for Respiratory Therapist 8310 Nieman Rd Lenexa, KS 66214	Individual scores without identifiers and national norms;	Results are automatically sent to accredited programs
Respiratory Technologist	C	CRRT	N			

Appendix 1

Sources for Licensure/Certification Examination Results In Selected Disciplines

Discipline	*License or Certification*	*Exam*	*National or State Exam*	*Source*	*Format of Results*	*Level of Availability*
Social Work	L	National written examination	N	American Association of State Social Work Boards 400 S. Ridge Pkwy, Ste B Culpepper, VA 22701	–not released to institutions–	Departments are limited to using self–reported examination scores
Veterinary Science	L	National written and clinical exam	N	American Association of Veterinary Science State Boards PO Box 633 Jefferson City, MO 65102	Institutional pass–fail data for over–all, individual sections, and individual examinations	Data sent to college
	L	State oral and practical exam	S			

Appendix 2

Current Status of State Legislative Reporting Requirements

Occupational Licensure Examination Pass Rates

State	Reporting Mandate
Florida	Pass rates
Kentucky	Pass rates
Lousianna	Pass rates by institution
South Carolina	Pass rates and scores
Tennessee	Pass rates and scores
West Virginia	Pass rates
Oklahoma	Optional for outcomes assessment report
Arkansas	Not specifically called for
Maryland	Not specifically called for
North Carolina	Not specifically called for
Texas	Assessment plan under development

Source: Bogue, G., Creech, J. & Folger, J. (1993). *Assessing Quality in Higher Education: Policy Actions in the SREB States.* Atlanta: Southern Regional Education Board.

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